

**Abstract**

Nanowires are formed using an approach that facilitates efficient and economical growth thereof. According to an example embodiment of the present invention, a gas  
5 including a semiconducting material (*e.g.*, single-crystal germanium) is introduced to a conductive metal particle (*e.g.*, gold) on an insulating substrate to grow a nanowire therefrom. In one implementation, an alloy is formed from the semiconducting material and the conductive metal particle, with the nanowire being grown from the alloy. In another implementation, a co-flow of hydrogen is used with the gas including the  
10 semiconducting material to facilitate the growth of the nanowire.